DEVELOPING AND REFINING LINKS AS A REPRESENTATION OF ORGANIZATIONAL CONNECTION

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DEVELOPING AND REFINING LINKS AS A REPRESENTATION OF ORGANIZATIONAL CONNECTION

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LIST OF SYMBOLS AND ABBREVIATIONS

CJE Composite Job Embeddedness

COE Composite Organizational Embeddedness

GJE Global Job Embeddedness

SUMMARY

Job embeddedness is a construct that attempts to explain voluntary employee turnover not from the lens of why people choose to leave, but why they choose to stay (Mitchell, Holtom, Lee, Sablynski, & Erez, 2001). The current research explores the role of links, a dimension of job embeddedness that quantitatively measures ties to individuals or activities (Lee, Mitchell, Sablynski, Burton, & Holtom, 2004), in predicting turnover intentions. More specifically, the study provides three notable contributions to the understanding of the embeddedness construct and the study of turnover more broadly. First, links were categorized into three types: tenure, relationship, and involvement. Findings suggest that relationship and involvement link types provide no incremental predictability of turnover intentions over that of tenure links alone – when measured using only quantitative measures as proposed by the job embeddedness scale (Mitchell et al., 2001). Second, findings found that quality link measures are meaningful predictors of turnover intentions and there is no interaction between quality and quantity links. Third, analysis of whether links mediate the relationship between personality and turnover intention show that all three quality link types and quantity tenure links possess significant indirect effects. These findings highlight some previous misconceptions of links and provide direction on how links can be used in the future to study turnover.

INTRODUCTION

Voluntary turnover, a phenomenon in which employees choose to leave their employer, is a potential risk for most organizations operating in free market economies. The Society for Human Resource Management (2016) found that in 2015, on average, nearly twenty percent of an organization's employees chose to voluntarily leave the organization and the time needed to fill vacant position takes on average 42 days. In financial terms, direct replacement costs for an employee can reach as high as 50%-60% of an employee's annual salary, costing firms approximately 12% of pre-tax income (Allen, 2008). When including indirect costs such as reduced productivity, loss of unique knowledge or skill set, or potential strain to other employees, some calculations associated with voluntary turnover are as high as 90% to 200% of annual salary (Allen, 2008).

Until the last decade or so, most theory and research pertaining to voluntary turnover stemmed from March and Simon's (1958) notion that voluntary turnover was determined by the ease and desirability of leaving one's job. In other words, if people feel there are job alternatives and those job alternatives are perceived to be better than their current job, they are likely to leave (Mobley, 1977). Although numerous studies provide support for the role of job attitudes and ease of movement in predicting voluntary turnover (e.g. Hom & Griffeth, 1995; Mobley, 1977), the results of these studies suggest that these variables do not account for the lion's share of the variance in turnover intentions (Griffeth, Hom, & Gaertner, 2000; Hom & Griffeth, 1995).

In 2001, Mitchell, Holtom, Lee, Sablynski, and Erez introduced a new construct designed to capture additional variance in turnover intentions. Specifically, they focused

on the socio-affective and economic reasons people stay at their current job rather than why they leave, and called their construct job embeddedness. Since its introduction, job embeddedness has been at the forefront of turnover research and has been proven to be a useful predictor of turnover- related intentions and behaviors above that of traditional approaches utilizing attitudinal and ease of movement variables (Jiang, Liu, McKay, Lee, & Mitchell, 2012; Lee et al., 2004; Mitchell et al., 2001; Zhang, Fried, & Griffeth, 2012).

The current research project focuses on expanding the links dimensions of the job embeddedness construct. Before introducing hypotheses, I will provide an explanation of the embeddedness construct and trace its development in the study of turnover intentions. I will then introduce new suggestions of how aspects of embeddedness, specifically "links," should be conceptualized to better understand how they capture employees' ties to an organization. Additionally, I examine the relationship between quality and quantity perceptions of links. Finally, I will introduce evidence to suggest the relationship between links and turnover can be better understood by considering a third variable: personality.

Traditional Voluntary Employee Turnover Model

March and Simon's *Organizations* (1958) is often credited as the seminal work underlying traditional approaches to studying voluntary employee turnover (Crossley, Bennett, Jex, & Burnfield, 2007; Mitchell et al., 2001). March and Simon's approach posits that job attitudes, combined with job alternatives (ease of movement), predict intent to leave, and intent to leave is the direct antecedent to turnover (March & Simon, 1958; Mitchell et al., 2001). Extensive research conducted on attitudinal predictors of turnover throughout the 1970s and 1980s (Mobley, 1977; Mobley, Horner, & Hollingsworth, 1978;

Muchinsky & Morrow, 1980) focused primarily on two job-related attitudes; namely, job satisfaction and organizational commitment. Later studies explored newer attitudinal constructs, such as occupational commitment (Shore & Tetrick, 1991), justice perceptions (Aquino, Griffeth, Allen, & Hom, 1997), and burnout (Wright & Cropanzano, 1998). Results of this research yielded similar findings to that of previous research: positive work attitudes were significantly, negatively related to voluntary turnover. Job alternatives were often measured using perceived job alternatives (e.g. Gerhart, 1990) and job search behavior (e.g. Blau, 1993). Consistent with previous models, better-perceived alternatives and more active searching are significantly and positively related to turnover.

Despite the research mentioned above showing significant results, the findings were at best modest, seldom explaining more than 10 percent of the variance in voluntary turnover (Griffeth et al., 2000). Abelson (1987) stated that researchers were growingly increasingly disillusioned with traditional approaches to studying turnover. Further, Maertz and Campion's (1998) review of the turnover literature concluded that new variables needed to be considered in the study of turnover.

The Job Embeddedness Construct

The job embeddedness model was built upon three sets of turnover research directions that emerged toward the end of the 20th century. The first stream of research explored non-work factors and how these variables might affect an individual's perception of work. For example, several studies found that family attachments and having a spouse and children (Lee & Maurer, 1999; Mobley, 1982) were better predictors of leaving one's job than organizational commitment. A second stream of research showed that work-

related group memberships, such as work teams, unions, and other work-related groups can induce employees to stay at their organization (Cohen & Bailey, 1997; Reichers, 1985). The third stream of research examined turnover using the unfolding model, which incorporates image theory (Beach, 1990), to develop decision frameworks involved in staying at or leaving one's current job (Lee & Mitchell, 1994, 1999). In examining different factors that influence the decision to leave an organization, Lee and Mitchell (1994, 1999) found that most people who leave their job are relatively satisfied with the job, do not search for other jobs before leaving, and leave because of a "shock" - an event that jars a person into a psychological analysis involved in quitting a job (e.g., receiving a call from a former colleague with a job offer).

These findings suggested the traditional models of employee turnover, which assumed workers left their jobs because of dissatisfaction or perceived better job opportunities, failed to account for the socio-emotional features of a job and the transitional costs that might lead people to stay even if other opportunities are available. Mitchell et al. (2001) proposed a new construct for predicting turnover from the perspective of what makes employees stay, rather than the factors that lead them to leave, called embeddedness. Per Mitchell et al. (2001), embeddedness represents a type of net in which an individual becomes affixed or stuck in his or her job. Three key factors determine an individual's level of embeddedness: (1) the extent the job affords links to other people, (2) the extent to which the individual's job and work community are similar to or fit with the other aspects in their life space, and (3) the ease with which interpersonal and organizational connections can be broken – in other words, what the individual would give up if they left their present job. Mitchell et al. (2001) termed these three components *links*, *fit*, and *sacrifice,*

respectively, and argued that the construct of job embeddedness required assessment of each component both on and off the job. Thus, this concept of job embeddedness may be described as a 3x2 multidimensional construct consisting of links, fit, and sacrifice dimensions both within an individual's organization and community. Job embeddedness is calculated by weighing each component equally, suggesting that each dimension contributes equally to job embeddedness (Mitchell et al., 2001).

Mitchell et al. (2001) tested the model using two samples, grocery store employees and hospital workers. Initial evidence for the convergent validity of the construct was supported by findings that showed job embeddedness was positively and significantly correlated to job satisfaction (r =.52 and r =.72 for the two samples used in the study, respectively); embeddedness was also negatively correlated to job search (r = -.24 and r = -.29) and job alternatives (r = -.12 and r = -.07) (Mitchell et al., 2001). Convergent validity was supported by findings that showed that non-affective components of embeddedness were only weakly correlated with traditional measures employee attachment. For example, organizational links were not highly correlated with job satisfaction (r = .03 and .10). In analyzing the predictive ability of the construct, Mitchell et al. (2001) showed that when controlling for traditional predictors of turnover, embeddedness did indeed improve turnover prediction over that of perceived desirability of movement (Δx^2 = 2.58, p < .05 and Δx^2 = 5.29, p < .01, for the two samples, respectively) and perceived ease of movement (Δx^2 = 6.18, p < .01 and Δx^2 = 7.36, p < .01, for the two samples, respectively).

Another approach to measuring embeddedness was introduced by Crossley et al. (2007). Crossley et al. (2007) operationalized embeddedness using a gestalt approach to developing a global job embeddedness (GJE) scale, in contrast to Mitchell et al.'s

composite job embeddedness (CJE) scale. Rather than relying on the forty plus questions typically used in Mitchell and colleagues' composite scale (Lee et al., 2004; Mitchell et al., 2001), the GJE used only seven questions, reducing possible carelessness in answering a lengthy questionnaire (Breaugh & Colihan, 1994). Crossley and colleagues contended that using a global measure would reduce the possibility of omitting some aspects of embeddedness that may be important to an individual or including some aspects that are irrelevant. Additionally, they proposed that a global scale would allow individuals to weigh aspects of embeddedness as they perceived them, compared to the equal weight conceptualization of the original composite scale. In testing their approach, Crossley et al. (2007) first ran two pilot studies to test their scale. Results of these pilot studies showed a single factor solution that accounted for 51% of total variance, a Cronbach's alpha scale of .88, and item-total correlation ranging from .60 to .75 (Crossley et al., 2007). Using this seven-item scale, the global measure was subsequently found to significantly predict variance in quitting ($\beta = -.22$), intent to search ($\beta = -.16$), and turnover ($\beta = -.31$, all ps < .01), above and beyond CJE (Crossley et al., 2007).

Crossley et al. suggest that the type of measures used in embeddedness should be determined by the context of the study. This conclusion was supported by Zhang et al.'s (2012) review of job embeddedness research, suggesting that the measure used to evaluate job embeddedness should be determined by the purpose of a specific study; the composite measure would be more appropriate for exploring associations between components of embeddedness and outcomes (e.g. work relationships and intention to quit), while the global measure would be a better choice for models using latent constructs (Crossley et al., 2007; Zhang et al., 2012). In other words, CJE would be more advisable for studying

particular aspects of what embeds an individual while the GJE is more useful when interested in big picture considerations related to embeddedness.

Focusing on Organizational Links to Study Turnover

As discussed previously, the composite job embeddedness (CJE) construct introduced by Mitchell et al. (2001) utilized organizational and community components to determine overall job embeddedness. However, later research found community and organizational embeddedness to not share similar nomological networks (Harman, Blum, Stefani, & Taho, 2009; Mallol, Holtom, & Lee, 2007). This makes practical sense as it is quite tenable that an individual could change jobs without having to relocate and thus without impacting one's relationship to community. As such, several recent studies have focused solely on organizational components in studying embeddedness (Halbesleben & Wheeler, 2008; Harris, Wheeler, & Kacmar, 2011; Hom et al., 2009; Sekiguchi, Burton, & Sablynski, 2008). A review of the turnover literature that considered different representative samples (including samples from grocery stores, hospitals, financial institutions, public organizations, and call centers) provides support for the notion that organizational embeddedness alone does significantly predict both voluntary turnover and intention to quit, with correlations ranging between -.08 to -.24 and -.35 to -.60, respectively (Zhang et al., 2012).

The GJE model (Crossley et al., 2007) is also of relevance in discussing organizational embeddedness. The global measure contains no questions pertaining to community and the seven items that comprise the scale are all at the organizational level. Based on the scale items, it could be argued that the GJE scale can be conceptualized as a

global organizational embeddedness scale, and recent research has indeed used the global job embeddedness scale to define and measure organizational embeddedness (Ng & Feldman, 2010, 2013a, 2013b; Qi, Li, & Zhang, 2014). In other words, global job embeddedness and organizational embeddedness are synonymous and can be used interchangeably to discuss how embedded individuals are to their current employer, lending support for reviewing organizational connections as a predictor of turnover intention.

The conceptualization of GJE as a measure of organizational embeddedness presents another noteworthy consideration related to composite organizational embeddedness as well. The composite organizational embeddedness (COE) scale, the portion on the CJE that excludes community measures, designed by Mitchell and colleagues (Lee et al., 2004; Mitchell et al., 2001) includes questionnaire items pertaining to job, organization, and industry. However, embeddedness in a job or an occupation does not have the same theoretical implications as being embedded in an organization (Ng & Feldman, 2007). Furthermore, the primary criterion explored by both overall job embeddedness and organizational embeddedness is voluntary turnover - in the form of actual turnover figures and intention to quit measures (Lee, Burch, & Mitchell, 2014). Almost uniformly, voluntary turnover in embeddedness research has been defined as leaving the company or organization (Allen, 2006; Crossley et al., 2007; Halbesleben & Wheeler, 2008; Harris et al., 2011; Kopelman, Rovenpor, & Millsap, 1992; Lee et al., 2004; Mitchell et al., 2001; Ramesh & Gelfand, 2010), not leaving a specific job. In efforts to align the level of predictor with criterion, it is beneficial to adjust COE measures to include only organization level related items.

Refining Links – Types and Quality

A major limitation of existing embeddedness research is that it takes on a black box approach to predict voluntary employee turnover. Embeddedness research utilizing the composite scale (Mitchell et al., 2001) aggregates component scores in their analyses to generate an overall embeddedness score. While this approach is useful when studying embeddedness from a broad perspective, it limits our understanding of the role of each of the components. In fact, I believe looking even at the component of links as one overall score is quite limiting. I suggest that links can be broken down into three categories: tenure, relationship, and involvement. Tenure links speak to the duration an individual employee has been with his or her employer. Relationship links attempt to capture the relationships an employee has with fellow employees. Involvement links evaluate the team and committee engagements of an employee. Exploring each of these links individually leads to a better understanding of factors that come to play in employees deciding to turnover from their current position.

In addition to quantity (i.e., the only characteristic currently included in the operationalization and assessment of links), links vary along several dimensions that may be critical to more meaningfully defining this construct. Specifically, links differ in (a) category—who they connect (e.g., peers, supervisors and subordinates, employees with clients), (b) quality—i.e., liking and respect, and (c) level of involvement. Earlier research (e.g., Crossley, et al. 2007; Mitchell, et al. 2001; Jiang, et al. 2012; Zhang, 2012) suggests that failure to account for these characteristics may limit the capacity of embeddedness measures based on purely quantitative operationalizations of links to predict both overall embeddedness and other valued outcomes. Particularly relevant to the proposed research,

the current conceptualization of links offers no means of assessing the extent to which the characteristics of connections with others in an organization influence individuals' turnover intentions. This represents both a significant gap in our understanding of embeddedness and presents an opportunity for expansion of its nomological network. In addition to considering the quantity of each of the three link types I identified above, I propose the quality evaluation of these link types allows for a more robust measure of how individuals conceptualize organizational links.

Personality and Links

In the interest of building a fuller understanding of links and their role in turnover intentions, I propose that personality also be considered a variable in the turnover model. Zimmerman (2008) found significant direct relationships among Emotional Stability, Conscientiousness, and Agreeableness with turnover intentions and actual turnover behavior. Additionally, subdimensions of personality have also emerged in turnover studies (e.g., risk aversion) (Allen, Weeks, & Moffitt, 2005; Jenkins, 1993; Vandenberghe, Panaccio, & Ben Ayed, 2011). Conceptually, I propose to examine models wherein the three-faceted conceptualization of links mediates relationships between personality and turnover intention.

The Present Investigation

One aim of the present study is to expand understanding of potential types of links and what role they play in turnover decisions. I propose that the COE measure of links can be broken down into three categories: links of tenure, relationship, and involvement. Considering theories of habit and past behavior predicting future behavior (Ouellette &

Wood, 1998; Triandis, 1977, 1979), one could suggest that links are predictive of turnover intention because they contain measures of tenure. Existing studies related to embeddedness that contain measures of links have not attempted to distinguish link types. In the effort to understand whether the link types related to relationships and involvement offer any predictive value in individuals' turnover intentions, I posit that relationship links and involvement links will offer incremental validity over tenure links alone.

Hypothesis 1A: Quantitative measures of relational links will offer incremental predictive validity for turnover intentions over tenure links alone.

Hypothesis 1B: Quantitative measures of involvement links will offer incremental predictive validity for turnover intentions over tenure links alone.

A second aim of this study is to incorporate a quality perspective in the measurement of links. The COE scale in its current composition asks only objective questions such as how many years have you been in your organization or how many individuals you interact with regularly at work. These types of items suggest that one's perceived quality of links plays no role in determining an individual's choice to leave an organization. I propose that both quality and quantity of links influences employee turnover decisions. More specifically, I posit that an individual's quantity of links will moderate the relationship between link quality and turnover intentions:

Hypothesis 2A: Quality and quantity measures of tenure will interact, where higher quantity measures will increase the negative relationship between quality link measures and turnover intentions.

Hypothesis 2B: Quality and quantity measures of relationships will interact, where higher quantity measures will increase the negative relationship between quality link measures and turnover intentions.

Hypothesis 2C: Quality and quantity measures of involvement will interact, where higher quantity measures will increase the negative relationship between quality link measures and turnover intentions.

A limitation of the classic COE scale is that nomologically, the antecedents of embeddedness are not clearly identified. Some recent initiatives (Hom, Mitchell, Lee, & Griffeth, 2012; Lee et al., 2014) have attempted to map the nomological map of the construct, but even the authors of the aforementioned projects admit the current map is limited. It may be concluded that particular organizational environments or interventions facilitate an individual embedding into an organization (e.g., Reitz & Anderson, 2011). However, it is worth exploring whether embeddedness simply serves as a mediator between personality types and turnover intentions. For example, emotional stability, conscientiousness, and agreeableness have shown direct relationships to turnover intentions (Zimmerman, 2008). I posit that individual differences, in respect to personality, may be the source of perceptions of embeddedness. Thus, I propose a model in which links mediate the personality-turnover intentions relationship. As discussed in previous sections of this document, I am interested in examining both the role of quality and quantity links. Thus, I propose two alternative models, one in which quality links are the mechanism through which personality influences turnover intentions and the other where quantity links serve as that mechanism:

Hypothesis 3A: Effects of personality on turnover intentions are transmitted through quality tenure links.

Hypothesis 3B: Effects of personality on turnover intentions are transmitted through quality relationship links.

Hypothesis 3C: Effects of personality on turnover intentions are transmitted through quality involvement links.

Hypothesis 4A: Effects of personality on turnover intentions are transmitted through quantity tenure links.

Hypothesis 4B: Effects of personality on turnover intentions are transmitted through quantity relationship links.

Hypothesis 4C: Effects of personality on turnover intentions are transmitted through quantity involvement links.

METHOD

Procedure

Data was collected through surveys administered over the internet. Participants were recruited via Mechanical Turk, where they were screened for participation prerequisites, completed a consent form, directed to the survey, and received a completion code to receive compensation for participation. Participants also received an email debriefing the study and thanking them for their participation.

The survey was designed so that questionnaire variables were presented in random order; however, all demographic information was submitted at the end. The survey contained a one-hour time limit for completion and participants received a compensation of $2.00

Participants

Participants were recruited via Mechanical Turk and received monetary compensation for participating in the study. Criteria for inclusion in the study were as follows: (1) Participant must be between 25-65 years of age, (2) Participants must be currently working full-time and have at least a 6 month tenure in the current position, (3) Participants must work in the U.S., and (4) Participants must be employed in an occupation defined as "management, business, and financial occupations" by the U.S. Bureau of Labor Statistics (2010). Individuals employed by the local or federal government were excluded from participating in this study due to findings by Jiang et al. (2012) that organization type (private or public) moderated the relationship between job embeddedness and turnover. The definitions for public organization types provided in the aforementioned study lacked clarity, so to avoid potential noise in the current study only individuals not involved in public sector work were eligible.

Data collection yielded 300 complete participant responses. The design of the survey contained six attention checks and participants were excluded from completion of the survey if failing to appropriately respond to the attention check (i.e., select strongly agree for this item). 12 participants were flagged as having data that seemed to contain errors (e.g., input error, outliers, or missing data). Analysis of these cases resulted in the retention of one participant (determined to be a data entry error in which an extra numeral

was entered in the submission of age) and the exclusion of the remaining 11 due to errors that were deemed to be ambiguous in origin.

A priori power analysis, assuming an effect size of .10, desired power of .95, with two predictors tested at a time, indicated that 226 subjects were needed to achieve desired power levels. Following the data clean, 289 participant responses were included in the analysis of data. Participants were comprised of 160 males (55.4%) with a mean age of 36.68 (SD = 9.364). Ethnicity, education, and employment type are displayed in Table 1.

Measures

Background Questionnaire. Participants were asked to provide background data about themselves, their occupations, and their employment history (e.g. age, highest level of education, marital status, years of work experience, job tenure in present position, industry, role, work shift, and work setting). Items are provided in Appendix A.

Quantity Organizational Links. Quantity of Organizational Links were measured using a 6 item revised version of Lee et al.'s (2004) composite scale. Two items were included for each type of link (tenure, relationship, and involvement). Sample items asked of respondents included "How many years have you worked for your current organization?" and "How many coworkers are dependent on you?" All items are provided in Appendix B.

Table 1
Sample Demographics

	Frequency	Percent
Ethnicity		
2 or More Ethnic Groups	9	3.1
African-American/Black (Non-Hispanic)	18	6.2
Asian or Pacific Islander	17	5.9
Hispanic (Non-White)	16	5.5
Native American	2	0.7
Other	2	0.7
White (Non-Hispanic)	225	77.9
Education		
College	142	49.1
Grade School	1	0.3
High School	59	20.4
Junior College	23	8
Post-Graduate	27	9.3
Technical School	37	12.8
Industry		
Construction	8	2.8
Education	25	8.7
Finance & Industry	25	8.7
Health Care & Social Assistance	31	10.7
Information Technology	55	19
Leisure & Hospitality	15	5.2
Manufacturing	25	8.7
Natural Resources & Mining	1	0.3
Other	29	10
Other Services	23	8
Professional & Business Services	39	13.5
Trade, Transportation, & Utilities	13	4.5

Quality Organizational Links. Quality of Organizational Links were measured using three separate scales relevant for each link category. To measure *Quality of Tenure Links*, a Likert-type global satisfaction was used to measure overall job satisfaction (Quinn & Stains, 1979): "All in all, how satisfied would you say you are with your job/position?" and "All in all, how satisfied would you say you are with your organization?" The two items had a correlation of r = .897.

Quality of Relationship Links was measured using the "People on Your Present Job" component of the Job Description Index (Bowling Green State University, 2009; Gillespie et al., 2016). The scale contained 18 total items; a sample item includes asking participants to respond with a "Yes, No, or ?" whether individuals they work with are "Stimulating." Internal reliability of the measure resulted in an α =.88. Items are provided in Appendix C.

Quality of Involvement Links was measured using a modified team/group satisfaction scale (Gladstein, 1984): "I am very satisfied with my work teams" and "I am very satisfied with my work committees." The two items had a correlation of r = .785.

Turnover Intentions. Turnover intentions were assessed with a five-item scale (Crossley, Grauer, Lin, & Stanton, 2002). Intention to quit scales lack formally validated scales (Aladwan, Bhanugopan, & Fish, 2013), so this questionnaire was selected because it focuses on intentions to leave one's current organization, rather than job or industry. The five items can be found in Appendix D. Internal consistency of the measure was α = .97.

Personality. Personality was measured using International Personality Item Pool (IPIP) personality items (Goldberg et al., 2006). Three of the major five personality factors

were deemed relevant for inclusion in the measurement of personality based on existing research demonstrating direct connection between personality traits and turnover intentions (Zimmerman, 2008). Additionally, each factor was limited to three or four specific facets so as to capture individual traits most relevant to turnover. Facet selection was guided by definitions and taxonomic structures provided in previous work related to framing personality in terms of facets (DeYoung, Quilty, & Peterson, 2007; Judge, Rodell, Klinger, Simon, & Crawford, 2013). A full listing of the measures is provided in Appendix E.

Agreeableness. Three facets of agreeableness selected as most relevant to the constructs of embeddedness and turnover intentions were *Trust, Cooperation*, and *Altruism.* Each facet contained 10 Likert-type items and the internal reliability of the measures was $\alpha = .95$, $\alpha = .84$, and $\alpha = .89$, respectively.

Conscientiousness. Conscientiousness was measured via the facets of *Dutifulness, Achievement,* and *Cautiousness.* Each facet consisted of 10 Likert-type items and the internal reliability of the three measures was $\alpha = .88$, $\alpha = .90$, and $\alpha = .90$, respectively.

Emotional Stability. Emotional Stability was measured using four facets: *Depression, Self-Consciousness, Vulnerability,* and *Anxiety.* A fourth facet was included in measuring this personality trait due to logical connections between the facets and turnover more so than with the other traits. Each facet consisted of 10 Likert-type items and the internal reliability of the four facets were $\alpha = .95$, $\alpha = .91$, $\alpha = .93$ and $\alpha = .93$, respectively.

Bogus items. Concerns have been raised about the accountability of data from online survey administrations due to a lack of personalization and the unproctored setting

(Johnson, 2005). In effort to address these concerns, three bogus questions were inserted into the survey (e.g., I am using a computer, tablet, or another electronic device to complete this survey), in addition to pre-screening questions. If not answered appropriately, respondents were disallowed from completing the survey. Additionally, four items were repeated from the pre-screening criteria to serve as attention checks (e.g., a question asking individual how many hours per week they work in their current role, with an acceptable response being at least 30 hours); failure to make an entry in a qualifying range disallowed participants from completing the survey. A full listing of bogus items and attention checks are included in Appendix F.

Analyses

Hypothesis 1A and 1B were tested using hierarchical regression. The quantitative tenure link variable was the first independent variable inserted into the model, and two separate tests were run to determine whether quantity relationship and quantity involvement links, respectively, improve the predictive ability of the model over using the tenure links alone.

Hypotheses 2A, 2B, and 2C were tested using template 1 of the PROCESS Macro (Hayes, 2013), adapted to the Process GUI application for R (Lim & Hubona, 2014). All variables were mean centered to generate both main effects and interaction term analyses. Conditional effects were evaluated using percentile values (i.e., 10^{th}, 25^{th},75^{th}, and 90^{th} percentile) of the quantity link measure (i.e., the moderator) for each model, with quality link treated as independent variable and turnover intention as criterion.

Hypotheses 3A, 3B, 3C, 4A, 4B, and 4C were tested using model template 4 within the PROCESS Macro (Hayes, 2013), adapted to the Process GUI application for R (Lim & Hubona, 2014). In each model examined, personality traits were treated as independent variables and link types using quality measures were treated as mediators for Hypothesis 3 models and quantity measures for Hypothesis 4 models.

RESULTS

Table 2 summarizes means, standard deviations, correlations, and Cronbach's alpha for key variables. One notable finding from the correlation matrix is that of the three quantity links measures, only tenure quality links were found to be significantly correlated to turnover intentions ($r = -.196$, $p < .01$). Conversely, all three quality link measures were found to be significantly correlated with turnover intentions (tenure quality: $r = -.740$, $p < .01$; relationship quality: $r = -.546$, $p < .01$; involvement quality: $r = -.603$, $p < .01$). Additionally, all three personality dimensions were found to be significantly correlated to turnover intentions (turnover intention and emotional stability, $r = .280$, $p < .01$; turnover intention and agreeableness, $r = -.326$, $p < .01$; and turnover intention and conscientiousness, $r < -.378$, $p < .01$).

Table 2
Descriptive Statistics

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. Agreeableness	113.38	19.95	**0.79**										
2. Conscientiousness	122.76	16.97	.61**	**0.79**									
3. Emotional Stability	95.56	33.44	-.49**	-.52**	**0.92**								
4. Tenure Quantity	5.62	3.85	.11	.16**	-.01	—							
5. Tenure Quality	5.08	1.55	.39**	.34**	-.38**	.14*	—						
6. Relationship Quantity	12.56	21.26	-.04	-.05	-.08	.07	.05	—					
7. Relationship Quality	27.78	6.74	.54**	.43**	-.39**	.05	.62**	-.09	**0.88**				
8. Involvement Quantity	1.137	0.71	-.08	-.05	-.10	-.01	.18**	.16**	-.01	—			
9. Involvement Quality	5.27	1.29	.43**	.38**	-.37**	.08	.77**	.04	.67**	.14*	—		
10. Turnover Intent	13.72	8.5	-.33**	-.38**	.28**	-.20**	-.74**	.04	-.55**	-.06	-.60**	**0.97**	
11. Age	36.6	9.36	.25**	.27**	-.21**	.42**	.07	0.05	.13*	-.06	.05	-.17**	—

Notes. N=289. Cronbach's Alpha values appear in bold along the diagonal. * $p < .05$ **$p < .01$ (two-tailed). Quantity Links were measured using Mitchell et al. (2001) items. Quality Link measures used were measured using proxy pre-existing scales. *Tenure Quality* was measured using a job satisfaction scale; *Relationship Quality* was measured via *JDI "People on Your Present Job"*; and *Involvement Quality* was measured using a team/committee satisfaction scale.

Links beyond Tenure

Hypothesis 1 (H1) posited that quantity link types other than tenure predicted turnover intentions. To test this hypothesis, hierarchical regression was utilized, where tenure links (in classic quantitative form) were included as the initial independent variables and two models were run where each of the additional link type variables was included

Specifically, H1A posited that relationship links would offer incremental validity over tenure links alone. The results showed that quantitative tenure links alone were significant in predicting turnover intentions ($R = .196$, $p < .01$), and the addition of quantitative relationship links made no significant change in the predictive validity of the model (R increased minimally to .198; $\Delta R^2 = .001$, $p > .05$).

H1B posited that involvement links would offer incremental validity over tenure links alone. However, inclusion of quantitative involvement links was found to be insignificant (R increased to .207; $\Delta R^2 = .004$, $p > .05$). Based on these findings, Hypothesis 1 was not supported.

Interaction of Link Types

Hypothesis 2 (H2) posited that there would be an interaction between link quality and link quantity. Initial development of the job embeddedness scale was motivated by the stance that turnover was studied primarily via attitudinal measures (e.g., organizational commitment) and such an approach failed to account for potential "shocks" during employment (Lee et al., 2014; Mitchell et al., 2001). However, research utilizing a gestalt approach (Crossley et al., 2007) and extensive work focusing on commitment (e.g., Meyer

& Allen, 1997) lend theoretical and empirical support for the use of perception in examining turnover intentions. I posited that the inclusion of both types of measures would improve our ability to predict turnover intentions. More specifically, I expected to find that both quality and quantity measures would show significant main effects in predicting turnover and that the two variables interacted so high quantity links would increase the quality link prediction of turnover intentions. I tested this hypothesis by using a moderation model that analyzed both quality and quantity variable independently (i.e., main effect) and the interaction term where they are multiplied by one another. Interactions that were found significant could then be analyzed using under different conditions of the variables to determine simple main effects (i.e., how particular values of one variable influenced the relationship between the other link type and turnover intention).

H2A posited that there would be an interaction between tenure quantity and quality measurements. While both link types showed significant main effects (i.e., effect of one link type on turnover intention, ignoring the other link type), the interaction term was not found to be significant ($\beta = .016$, $p > .05$). This hypothesis was not supported.

H2B posited there would be an interaction between relationship quantity and quality link measures. This hypothesis was not supported as the interaction term was not found to be significant ($\beta < .000$, $p > .05$). Additionally, only the main effect of relationship quality on turnover intentions was found to be significant ($\beta = -.698$, $p < .01$), while the relationship quantity measure was not significant.

H2C posited an interaction between involvement quantity and quality link measures. The results of H3C were similar to that of H2C, where the quality measure of

tenure was found to be significant (β = 3.998, p < .01), but interaction and tenure quantity was not found to be significant.

In summary, Hypothesis 2 was not supported. Interaction between quality and quantity link measures was not found to be significant in all three models tested (i.e., tenure, relationship, and involvement links). A summary of these results can be found in Table 3.

Table 3
Summary of Main Effects and Interaction for Link Types

	Turnover Intention β		
	Tenure Links	***Relationship Links***	***Involvement Links***
Predictor	*Coefficient*	*Coefficient*	*Coefficient*
Quality Measure	-3.973**	-0.698**	-3.998**
Quantity Measure	-0.221*	-0.034	0.215
Quality x Quantity	0.016	0.000	-0.005
R^2	.557**	.305**	.364**

Notes. N=289. Variables were mean centered prior to analysis. * p < .05. **p < .01.

Personality Transmitted through Links

Hypothesis 3 (H3) posited that the relationship between personality and turnover intention, which is supported by previous studies (Allen et al., 2005; Jenkins, 1993; Zimmerman, 2008) and the present one, is transmitted via links. To test this hypothesis, I tested nine models in which the personality measures of Agreeableness, Conscientiousness, and Emotional Stability were treated as the independent variable and quality link types (tenure, relationship, and involvement) were examined as the mediator. For significant indirect effects, effect sizes were calculated utilizing k^2 (Preacher & Kelley, 2011).

H3A posited that personality and turnover intentions would be mediated via quality tenure links. Results show significant indirect effects of tenure as a mediator for all three personality traits measured (Agreeableness, Conscientiousness, and Emotional Stability); 95% CIs [-.370, -.191], [-.314, -.155], and [.184, .378], respectively. Also notable is that the relationship of agreeableness and emotional stability to turnover intention is fully mediated through the quality tenure link measure (i.e., job satisfaction). The path between conscientiousness and turnover intent is partially mediated. Thus, hypothesis H3A is fully supported (See Table 4).

Table 4
Quality Tenure Links as a Mediator for Personality-Turnover Intentions

Variable	**Estimate** (Indirect Effect)	**SE**	**95% CI**	k^2
Agreeableness	-0.283*	0.045	[-.370, -.191]	0.315
Conscientiousness	-0.233*	0.040	[-.314, -.155]	0.262
Emotional Stability	0.280*	0.050	[.184, .378]	0.316
Variable	**Estimate** (Direct Effect)	**SE**	**95% CI**	
Agreeableness	-0.018	0.018	[-.054, .018]	
Conscientiousness	-0.073*	0.021	[-.114, -.032]	
Emotional Stability	0.000	0.011	[-.022, .021]	

Notes. N=289. Indirect Effects were reported as standardized estimates. k^2 is effect size and is only reported for statistically significant estimates. * indicates estimate is significant at $p < .05$.

H3B posited that quality relationship links transmitted the effects of personality on turnover intentions. Significant indirect effects were found for all three personality traits (Agreeableness 95% CI [-.361, -.206], Conscientiousness 95% CI [-.274, -.136], and Emotional Stability 95% CI [.136, .270]); quality relationship links fully mediated the relationship of Agreeableness and Emotional Stability to turnover intentions. Thus, H3B is supported (See Table 5).

Table 5
Quality Relationship Links as Mediator for Personality-Turnover Intentions

Variable	**Estimate** (Indirect Effect)	**SE**	**95% CI**	k^2
Agreeableness	-0.281*	0.040	[-.361, -.206]	0.258
Conscientiousness	-0.203*	0.035	[-.274, -.136]	0.201
Emotional Stability	0.199*	0.034	[.136, .270]	0.199
Variable	**Estimate** (Direct Effect)	**SE**	**95% CI**	
Agreeableness	-0.019	0.025	[-.068, .030]	
Conscientiousness	-0.088*	0.027	[-.141, -.034]	
Emotional Stability	0.021	0.014	[-.006, .047]	

Notes. N=289. Indirect Effects were reported as standardized estimates. k^2 is effect size and is only reported for statistically significant estimates. * indicates estimate is significant at $p < .05$.

H3C posited that the relationship between personality and turnover intentions was transmitted through quality involvement links. Results showed that all three personality traits were mediated via quality tenure links: Agreeableness 95% CI [-.329, -.171], Conscientiousness 95% CI [-.017, -.008], and Emotional Stability 95% CI [.144, .299]. Full mediation was found for Agreeableness and Emotional Stability on turnover intentions. H3C was fully supported (See Table 6).

Utilizing Preacher & Kelly's (2009) k^2 to calculate mediation effects, the effects for all models analyzed ranged between .199 and .316. General benchmarks for using k^2 suggest that small, medium, and large effect sizes are indicated by values of .01, .10, and .25, respectively (Vacha-Haase & Thompson, 2004), concluding that the mediation effects found in this analysis were large.

Table 6
Quality Involvement Links as Mediator for Personality-Turnover Intentions

Variable	Estimate (Indirect Effect)	SE	95% CI	k^2
Agreeableness	-0.246*	0.041	[-.329, -.171]	0.247
Conscientiousness	-0.012*	0.002	[-.017, -.008]	0.213
Emotional Stability	0.213*	0.039	[.144, .299]	0.221

Variable	Estimate (Direct Effect)	SE	95% CI
Agreeableness	-0.034	0.022	[-.078, .009]
Conscientiousness	-0.086*	0.025	[-.135, -.036]
Emotional Stability	0.017	0.012	[-.008, .042]

Notes. N=289. Indirect Effects were reported as standardized estimates. k^2 is effect size and is only reported for statistically significant estimates. * indicates estimate is significant at $p < .05$.

Hypothesis 4 (H4) also explored whether links are the mechanism through which personality influences turnover intentions, but focused on quantity links as outlined by the original embeddedness model rather than the quality links explored in the previous set of hypotheses.

H4A posited that quantity tenure links would mediate the relationship between personality and turnover. Results showed significant indirect effects for quantity tenure links mediating agreeableness (95% CI [-.044, -.002]) and conscientiousness (95% CI [-.049, -.005]) on turnover intentions. An indirect effect in relation agreeableness was not found to be significant, and all direct effects between personality and turnover intentions were found to be significant. Thus, H4A was partially supported (See Table 7).

H4B posited that quantity relationship links mediated personality traits on turnover intentions. However, indirect effects were not found to be significant for all three personality types, while direct effects were. Thus, support was not found for H4B (See Table 8).

Table 7
Quantity Tenure Links as Mediator for Personality-Turnover Intentions

Variable	Estimate (Indirect Effect)	SE	95% CI	k^2
Agreeableness	-0.018*	0.011	[-.044, -.002]	0.019
Conscientiousness	-0.022*	0.011	[-.049, -.005]	0.024
Emotional Stability	0.017	0.012	[-.001, .046]	*N.S.*

Variable	Estimate (Direct Effect)	SE	95% CI
Agreeableness	-0.131*	0.024	[-.178, .085]
Conscientiousness	-0.178*	0.027	[-.232, -.124]
Emotional Stability	0.067*	0.014	[-.039, .095]

Notes. N=289. Indirect Effects were reported as standardized estimates. k^2 is effect size and is only reported for statistically significant estimates, otherwise noted as N.S. * indicates estimate is significant at $p < .05$.

Table 8
Quantity Relationship Links as a Mediator for Personality-Turnover Intentions

Variable	Estimate (Indirect Effect)	SE	95% CI	k^2
Agreeableness	0.002	0.004	[-.002, .017]	*N.S.*
Conscientiousness	0.003	0.004	[-.003, .015]	*N.S.*
Emotional Stability	0.001	0.004	[-.006, .012]	*N.S.*

Variable	Estimate (Direct Effect)	SE	95% CI
Agreeableness	-0.140*	0.024	[-.186, -.093]
Conscientiousness	-0.191*	0.027	[-.245, -.137]
Emotional Stability	0.071*	0.014	[.042, .099]

Notes. N=289. Indirect Effects were reported as standardized estimates. k^2 is effect size and is only reported for statistically significant estimates, otherwise noted as N.S. * indicates estimate is significant at $p < .05$.

H4C posited that quantity involvement links mediated personality on turnover intention. Similar results were found for H4C as H4B, where indirect effects were not found to be significant while direct effects were. Thus, H4C is also not supported (See Table 9).

Table 9
Quantity Involvement Links as a Mediator for Personality-Turnover Intentions

Variable	Estimate (Indirect Effect)	SE	95% CI	k^2
Agreeableness	0.007	0.008	[-.002, .030]	*N.S.*
Conscientiousness	0.004	0.006	[-.004, .022]	*N.S.*
Emotional Stability	0.004	0.007	[-.006, .024]	*N.S.*

Variable	Estimate (Direct Effect)	SE	95% CI
Agreeableness	-0.142*	0.024	[-.189, -.095]
Conscientiousness	-0.191*	0.027	[-.245, -.137]
Emotional Stability	0.070*	0.014	[.042, .099]

Notes. N=289. Indirect Effects were reported as standardized estimates. k^2 is effect size and is only reported for statistically significant estimates, otherwise noted as N.S. * indicates estimate is significant at $p < .05$.

Additional (Exploratory) Analysis

The purpose of this research project is to understand how links (both quality and quantity) influence turnover decisions. To provide additional insights into predicting and understanding turnover intentions, I performed an exploratory analysis to create a regression equation that best predicts turnover intentions from the data collected in this study. I used a four-step hierarchical regression (See Table 10). The first step pulls from prior research on turnover predicting turnover, so all three personality traits were put into the model. The second step included all three quality link measures, based on findings in this study of their significance to turnover intentions. The third step included tenure quantity links – based on findings from Hypothesis 1. Lastly, I included the two remaining quantity links measures of relationships and involvement.

These models showed that each step provided significant incremental validity (change in R^2) to the model until step four of the model - inclusion of the quantity

relationship and involvement links. Determining model 4 as not offering significant predictive validity, model 3 can be considered the model of best fit. This model presents a regression that can account for 59% of the variance in the prediction of turnover intentions. The statistically significant variables in this model are Conscientiousness, tenure quality, relationship quality, and tenure quantity. Analysis of a model containing only those four variables produced an R^2 of .579. Additionally, age and gender were considered for inclusion in this model, but exploratory analysis found that these two variables offered no added predictive validity. Given that these variables represent attributes that are also included in laws pertaining to discrimination protection (e.g., race in the Civil Rights Act of 1964 and age in the Age Discrimination Act of 1975), I excluded their representation in the models below.

Table 10
Models for Predicting Turnover Intentions

	Turnover Intention β			
Predictor	*Model 1*	*Model 2*	*Model 3*	*Model 4*
Agreeableness	-0.128	.079	.082	.088
Conscientiousness	-.256**	-.189**	-.176**	-.175**
Emotional Stability	.086	-.077	-.078	-.075
Tenure Quality		-.648**	-.631**	-.638**
Relationship Quality		-.122*	-.132*	-.130*
Involvement Quality		-.016	-.022	-.025
Tenure Quantity			-.092*	-.089*
Relationship Quantity				.044
Involvement Quantity				-.027
R^2	.162**	.580**	.589**	.591**
ΔR^2		.418**	.008*	.002

Notes. N=289. Coefficients are presented as standardized estimates. For changes in R^2 models were compared with their previous ones. * $p < .05$. **$p < .01$. *Tenure Quality* was measured using a job satisfaction scale; *Relationship Quality* was measured via *JDI*; and *Involvement Quality* was measured using a team/committee satisfaction scale.

DISCUSSION

The proposed study extends the research literature on job embeddedness by examining relationships between components of organizational embeddedness, personality, and turnover intentions. The embeddedness construct (Mitchell et al., 2001) presented a new way for researchers and practitioners to think of employee turnover, focusing on what keeps people at their current position rather than what makes them want to leave.

A noteworthy limitation of the embeddedness construct, especially the component organizational embeddedness (COE) scale, is that it has been used as a black box for predicting turnover; while the scale predicts turnover and there is evidence of the scale serving as a stronger predictor than alternative measures such as affective commitment, and job alternatives (Jiang et al., 2012), the research literature lacks a nuanced exploration of the parts that make up the COE scale. This project attempts to tackle this problem by examining the "links" piece of the COE.

Links, as defined by Mitchell and colleagues, are formal or informal connections between a person and institutions or other people (Mitchell et al., 2001). Hypothesis 1 of this study suggests that the operationalization of links in the COE scale does not capture these connections. This project classified links as measured by the COE into three types: tenure, relationship, and involvement. H1A failed to find that relationship links provide significant incremental validity for turnover intentions above that of tenure. H1B considered whether involvement links – the number of teams and committees on which an individual serves – offered incremental validity over tenure. Similar to H1A, H1B did not

find significant incremental validity. Further, a review of the correlation matrix (See Table 2) found that neither relationship links nor involvement links, as operationalized in the COE, significantly correlate with intentions to quit. These findings suggest that the predictive mechanism of links promoted by the COE operationalization of links lies simply in an individual's tenure.

Another aspect of links that this project examined relates to the measurement of links. Hypothesis 2 tested whether there is an interaction between quality and quantity of links to predict turnover intentions. The analyses showed that for all three link types (i.e., tenure, relationship, and tenure), there was no interaction between quantity and quality link measures. Further, these analyses highlight that while tenure was the only measure of quantity links that predicted turnover intentions, all three quality link measures – as operationalized via global job satisfaction, JDI's "People on Your Present Job," and team/committee satisfaction – significantly predicted turnover intentions. In fact, not only did the three quality link types predict turnover intentions, they can be defined as having large effect sizes based on the percentage of variance they explain (Vacha-Haase & Thompson, 2004). These findings rebuff the stance implied by the initial COE scale that quantitative methods alone should be used to study turnover intentions. This study demonstrates the importance of avoiding an either/or approach (i.e., quality versus quantity measurement) to studying and understanding a phenomenon. While quantity links have been championed as the method by which organizational embeddedness and turnover should be studied, by analyzing both quantity and quality measures this study suggests that quality measurement may be a better way to conceptualize the construct.

Lastly, this project built upon prior individual differences literature that established a correlation between personality and turnover intentions (e.g., Zimmerman, 2008) to posit that links (using both quality and quantity measures) mediate the relationship between the two. Hypothesis 3, which examined quality links as the mediator, was fully supported as all three links mediated the relationship between personality traits and turnover intentions. In fact, the relationship between agreeableness and emotional stability on turnover intention was fully mediated by quality measures of links. Additionally, models examining quality links as mediators possessed large effect sizes. These findings tell us that quality links are a major mechanism through which personality influences turnover intention.

Hypothesis 4, which examined quantity links as mediator, found that quantity tenure link measures were the only quantity links with significant indirect effects, mediating the relationship between agreeableness and conscientiousness on turnover intention. However, even these effects were relatively small in size ($k^2 < .02$). Thus, unlike quality links, this study suggest quantity links are not a primary mechanism through which personality influences turnover intention.

Theoretical Implications

A criticism of the job embeddedness construct is it lacks a theoretical rationalization for its design. In general, embeddedness was derived from embedded figures and field theory, which both spoke to an individual meshing or being tied to an environment. (Lee et al., 2014). However, no explicit theoretical support has been provided for why the construct was operationalized in the manner that it was, particularly that of links, other than it presents a unique approach to the study of turnover (Mitchell et

al., 2001). So while this construct lacks some theoretical clarity, this research presents a number theoretical contributions to the study of voluntary turnover.

One major contribution of the present study to understanding turnover is evidence demonstrating the utility of qualitative assessment in assessing the links an individual has to a workplace. This research shows that the quality measures of tenure, relationship, and tenure links provide a better prediction of turnover intentions than their quantity counterparts. While using non-attitudinal measures in evaluating the work experience was introduced by the COE in an effort to address shortcomings of prior turnover models (Lee et al., 2014; Mitchell et al., 2001), utilizing strictly quantitative measures was a misstep that does not contribute to our understanding of how tied an individual feels to an organization, in relation to intention to quit. The findings in this paper confirm that the three link types are meaningful in predicting turnover intentions but when measured using quality measures. Of the quantity measures, the only one that is a significant predictor of turnover intentions and offers incremental predictive validity over its corresponding quality link type is tenure. It would be presumptuous to assert that the quantity of relationship and involvement link types have no value (which will be discussed further in the limitation and future directions sections of this document); however, the current findings do suggest that perceived quality of links is the more important consideration in an individual's decision to leave an organization than the number of links that they possess.

A second implication of this research is a clearer understanding of the role of personality in the mechanisms underlying turnover intentions. Looking at quality links, the three links types mediated all three personality traits explored in this study (Agreeableness, Conscientiousness, and Emotional Stability). Notably, Agreeableness and

Emotional Stability were fully mediated by quality links. These findings demonstrate that the way in which personality influences turnover decisions is through the variables this study used to measures link quality. Additionally, tenure quantity links serve as a mechanism through which personality influences turnover decisions, with results fining partially mediation for Agreeableness and Conscientiousness. These findings point to the value of capturing both personality and quality link measures when studying turnover. They also suggest that tenure quantity should be a standalone variable rather than be categorized as a "link" in the COE model. Conversely, if improved methods of measurement are not found for quantity relationship and involvement links, tenure should be the sole representation quantity links.

A third contribution of this research is that it underscores the importance of holistic appraisal of an individual's life situation in considering whether or not they will choose to leave an organization. Embeddedness has, like organizational commitment, been shown to significantly influence turnover intentions. Specifically, researchers in the embeddedness space have demonstrated that job embeddedness improved turnover prediction over prior constructs, including commitment (Lee et al., 2004; Mitchell et al., 2001). On the premise that the *fit* and *sacrifice* components of COE are subsumed in commitment measures (Meyer & Allen, 1991), the aforementioned incremental improvement in predictive validity has been attributed by some to job embeddedness' novel integration (i.e., alongside organizational embeddedness) of links and community embeddedness. Results in the current examination of links, however, suggest that non-tenure links, as operationalized in the COE are not very meaningful predictors of turnover intention. This supports the proposition that the remaining unique component of job

embeddedness, community embeddedness, may actually be the source of the additional incremental predictive validity (i.e., over commitment measures) offered by job embeddedness. Indeed, in a meta-analysis of embeddedness, community embeddedness was found to be just as important if not greater a predictor of turnover intentions as organizational embeddedness (Jiang et al., 2012). Thus, it may be imprudent to assume that turnover decisions are predicated solely upon employees' relationship to their work organizations.

A final contribution of this research is to facilitate a discussion about using "black box" approaches to study psychological phenomena. The introduction of the Mitchell et al.'s job embeddedness launched a number of streams of research utilizing the COE, and implicitly links, as both a predictor and criterion (Lee et al., 2014; Zhang et al., 2012). By not having a better understanding of the pieces that make up job embeddedness, a problem this research project aimed at helping to reduce, numerous studies were conducted without knowledge of what particular psychological phenomena are actually being analyzed. Thus, literature has been produced that simply speaks to the statistical relationship between variables without a contribution to the understanding of individuals and their perspectives on work. More specifically, findings presented in this document highlight that two of the three links types (relationships and involvement) that make up the organizational links measure are not statistically related to turnover intention. However, these relationships, or lack thereof, could result in both scholars and practitioners making false conclusions about the influence of these variables on turnover decisions.

Practical Implications

In addition to offering theoretical implications, this study also contributes to practical implications. Specifically, this project supports two main contributions. The first is that organizations that want to retain employees should facilitate the establishment of quality links. This implication is contradictory to prior embeddedness research findings that would suggest the establishment of a high *quantity* of links improves employee retention. In addition to traditional job satisfaction measurement, regular evaluations of organizational involvements and relationships, matching tools that pair individuals with similar attributes, and promoting rotational engagements through which individuals might meet other colleagues and are exposed to teams that might be a good fit are all examples of embeddedness improvement strategies.

In Industrial-Organizational Psychology, there is often a tension between practical implications that either benefit the individual or benefit the organization (Weiss & Rupp, 2011). In this case, the findings support a win-win relationship. Higher perceived quality relationships and involvements suggest that happier employees are more likely to stay with an organization. Thus, this would be an implication that results in employees and organizations benefitting.

A second practical implication from this study pertains to findings supporting the use of personality and links as selection tools. Findings in this project showed that personality is both predictive of turnover intentions and formation of meaningful links. As such, this underscores the utility of personality as a personnel selection tool. Subsequently, consideration of link scores (when inclusive of quality assessment) could be used for

promotional decisions. This would likely be most relevant after identifying candidates for promotion, and link scores could then be used as a proxy of which candidates would likely stay with the organization after receiving the promotion. Additionally, it may be possible for links to exist prior to full-time employment (e.g., an internship experience or industry association) and be considered for actual hiring decisions.

Limitations

One limitation of this study is that it was conducted using a cross-sectional methodology. In other words, the findings presented in this research present a snapshot of the relationship between links and intentions to quit. Conversely, a longitudinal approach would provide a greater indicator how shifts in links, both qualitative and quantitative, may influence an individual's intent to quit. However, the scope of this research provides new light on an existing phenomenon (i.e., the value of qualitative links and the personality's role in turnover) that utilized a cross-sectional approach as an initial segue into this area of turnover research.

A second limitation of this research is the variable used to measure quality tenure links – the most meaningful predictor of the three quality link types. Tenure (in terms of quantity) presents a historical representation of an individual's ties to an organization. In this study, quality tenure links were assessed using a revised job satisfaction scale. The items in this type of scale ask about current perceptions of individual's employment. An ideal variable would either ask an individual to consider their perceptions of employment over the duration of their employment or compile satisfaction like measures taken throughout one's employment. The utilization of a revised tenure quality measure could

also help reduce the correlation to the current quality relationship (r = .62) and involvement (r = .77) measures.

A third limitation of this research is the use of intention to quit as the criterion variable. Intent to perform an action or behavior and actual initiation of behavior are unique phenomena with a meta-analysis finding the correlation to be approximately .44 (Griffeth et al., 2000). Tracking volitional quitting statistics of respondents would be the ideal state of affairs for turnover research. However, the use of voluntary turnover data presents many of its own challenges. If continuing to use self-reported data, as done via Mechanical Turk in this study, the study would require multiple measurement points and an advised timeframe of 1-2 years in order to reduce variance constraints of shorter studies and participant attrition and emergence of unexpected confounds of longer studies (Ng & Feldman, 2009). Additionally, voluntary turnover data reported by organizations has been found to provide inaccurate reports due to deception or clerical mislabeling (Mobley, Griffeth, Hand, & Meglino, 1979).

Future Directions

This research leads to several contributions and considerations to facilitate future research directions. One such future direction pertains to the refinement of turnover intentions. This study operationalized turnover in terms of leaving the organization at which one works. However, it is possible that turnover should be studied on a more micro level of analysis. At organizations that provide flexibility for individuals to choose which work unit or team employees work with, it may be beneficial to explore turnover at a work unit level. In this shift, embeddedness links may have different implications than at the

organizational turnover level. Additionally, it would be interesting to identify whether flexibility to change organizational roles influences decisions to leave the organization altogether.

A second future research direction supported by this study is for further exploration of both types of links and methods by which to measure links. The present study used the COE framework of considering all links to be equal. Conversely, perhaps particular links are more influential than others. For example, some embeddedness research has looked at how supervisor embeddedness influences an individual's embeddedness (Ng & Feldman, 2013a). Perhaps other unique or meaningful links also serve as contributory mechanisms for an individual to embed in an organization. Potential examples could include relationship quality with high-status individuals or selection to participate on an exclusive team or committee.

Conclusion

The turnover of employees is a highly costly proposition to organizations. In addition to fees associated with finding and training replacements, there are hidden costs such as productivity and knowledge loss, as well as morale damage (Hinkin & Tracey, 2000). Understanding the mechanisms that drive employee turnover is beneficial to both scientists and practitioners. By operationalizing links into three types and exploring the relationship of each link type to turnover, including quality measurements in evaluating links, and examining the relationship between personality and turnover intentions via links, the current study contributes to the literature by providing a more nuanced understand of links in embedding an employee to an organization.

APPENDIX A: BACKGROUNG QUESTIONNAIRE

Q22 Demographic Information Please respond to the following questions about you. Your responses are completely voluntary. That is, you do not have to provide any information you do not want to.

Q23 What is your sex?
- ❍ Male (1)
- ❍ Female (2)
- ❍ Other (3)

Q24 What is your age?

Q25 What is your marital status?
- ❍ Single (1)
- ❍ Married (2)
- ❍ Divorced or Separated (3)
- ❍ Widowed (4)
- ❍ With a partner (5)

Q26 What is the highest level of education you have completed?
- ❍ Grade School (1)
- ❍ High School (2)
- ❍ Junior College (3)
- ❍ Technical School (4)
- ❍ College (5)
- ❍ Post-Graduate (6)

Q27 Please select the option that best describes your ethnicity.
- ❍ White (Non-Hispanic) (1)
- ❍ African-American/Black (Non-Hispanic) (2)
- ❍ Hispanic (Non-White) (3)
- ❍ Asian or Pacific Islander (4)
- ❍ Native American (5)
- ❍ 2 or More Ethnic Groups (6)
- ❍ Other (7)

Q46 Occupational Questionnaire Please respond to the following questions about your current job and your work history. Your responses are completely voluntary. That is, you do not have to provide any information you do not want to.

Q28 How many full-time jobs (i.e., at least 30 hours per week) have you held in your life, including your current job?

Q29 Please select the option that best describes your current position.
- ❍ Executive (1)
- ❍ Manager/Supervisor (2)
- ❍ Individual Contributor/Non-supervisory Employee (3)

Q30 How many years have you worked for your current organization? *NOTE: You may use decimals for months. For example, if you have worked on your job for 6 months, you would enter 0.5 in the box below.

Q31 How many years have you worked in your current role? *NOTE: You may use decimals for months. For example, if you have worked in your role for 6 months, you would enter 0.5 in the box below.

Q32 How many hours per week do you work in your current role?

Q33 Please select the option below that best describes your industry.
- ❍ Construction (1)
- ❍ Education (2)
- ❍ Health Care & Social Assistance (3)
- ❍ Finance & Industry (4)
- ❍ Information Technology (5)
- ❍ Leisure & Hospitality (6)
- ❍ Manufacturing (7)
- ❍ Natural Resources & Mining (8)
- ❍ Other Services (9)
- ❍ Professional & Business Services (10)
- ❍ Trade, Transportation, & Utilities (11)
- ❍ Government (12)
- ❍ Other (13)

Q34 Which of the following best describes your current job function?
- ❍ Finance/Accounting (1)
- ❍ Human Resources (2)
- ❍ Information Technology (3)
- ❍ Sales (4)
- ❍ Construction/Maintenance (5)
- ❍ Customer Service (6)
- ❍ Other (7)

Q42 How many people work at your current organization?
- ❍ Less than 50 (1)
- ❍ Greater than 50, but less than 100 (2)
- ❍ Greater than 100, but less than 200 (3)
- ❍ Greater than 200 (4)

Q43 Approximately, what is your current annual salary?
- ❍ $0 - $25,000 (1)
- ❍ $26,000 - $50,000 (2)
- ❍ $51,000 - $75,000 (3)
- ❍ $76,000 - $100,000 (4)
- ❍ $101,000 - $125,000 (5)
- ❍ $126,000+ (6)

Q46 Please select the option below which best describes your type of pay:
- ❍ Hourly (1)
- ❍ Salaried (2)

Q47 Which of the following best describes your current employment?
- ❍ Contract open-ended (1)
- ❍ Contract time-limited (2)
- ❍ Regular full-time (3)
- ❍ Regular full-time engaged in contract based work (4)
- ❍ Temporary/project-based Employment (5)
- ❍ Other - Please describe (6) _____

Q48 Do you clock-in at the start of your work day and clock out at the end of your work day?
- ❍ Yes (1)
- ❍ No (2)

Q49 On average, what percentage of your job is interaction with the following (total must sum to 100):
_____ Employees (1)
_____ Customers/Clients (2)
_____ Vendors (3)

Q50 What percentage of the time you spend interacting with others at work is spent in the following ways (total must sum to 100):
_____ Face to face (1)
_____ Email/text based messaging (2)
_____ Video conferencing (e.g., skype) (3)
_____ Virtual collaboration tools (e.g., citrix) (4)
_____ Phone (5)
_____ Other (6)

Q51 What percentage of your working time is spent in the following setting (sum to 100)
_____ Office/Cubicle (1)
_____ Home Office (2)
_____ Client or Field Sites (3)
_____ Assembly/Manufacturing/Warehouse (4)
_____ Call Center (5)
_____ Other (6)

Q52 How many paid jobs do you currently work (including part-time and full-time)?

Q53 Please describe your main job duties in a few sentences (e.g., I repair transmissions, I am a cook, I help clients with financial planning, etc.).

APPENDIX B: QUANTITATIVE ORGANIZATIONAL LINKS

Tenure:
How many years have you been in your present role? (years)
How many years have you worked for this organization? (years)

Relationship:
How many coworkers do you interact with regularly?
How many coworkers are highly dependent on you?

Involvement:
How many work teams are you on?
How many work committees are you on?

APPENDIX C: JOB DESCRIPTION INDEX (JDI)

People on Your Present Job

Think of the majority of people with whom you work or meet in connection with your work. How well does each of the following words or phrases describe these people? In the blank beside each word or phrase below, write
Y for "Yes" if it describes the people with whom you work
N for "No" if it does not describe them
? for "?" if you cannot decide

__ Stimulating
__ Boring*
__ Slow*
__ Helpful
__ Stupid*
__ Responsible
__ Likeable
__ Intelligent
__ Easy to make enemies*
__ Rude*
__ Smart
__ Lazy*
__ Unpleasant*
__ Supportive
__ Active
__ Narrow interests*
__ Frustrating*
__ Stubborn*

* Donates Items to be reverse-scored.

APPENDIX D: TURNOVER INTENTION SCALE

I intend to leave this organization soon
I plan to leave this organization in the next little while
I will quit this organization as soon as possible
I do not plan on leaving this organization soon (reverse scored)
I may leave this organization before too long

APPENDIX E: PERSONALITY ITEMS

Trust

Please read each statement carefully, and then use the rating scale below to describe how accurately each statement describes you.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)
Trust others. (1)	❍	❍	❍	❍	❍
Believe that others have good intentions. (2)	❍	❍	❍	❍	❍
Trust what people say. (3)	❍	❍	❍	❍	❍
Believe that people are basically moral. (4)	❍	❍	❍	❍	❍
Believe in human goodness. (5)	❍	❍	❍	❍	❍
Think that all will be well. (6)	❍	❍	❍	❍	❍
Distrust people. (7)	❍	❍	❍	❍	❍
Suspect hidden motives in others. (8)	❍	❍	❍	❍	❍
Am wary of others. (9)	❍	❍	❍	❍	❍
Believe that people are essentially evil. (10)	❍	❍	❍	❍	❍

Cooperation

Please read each statement carefully, and then use the rating scale below to describe how accurately each statement describes you.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)
Am easy to satisfy. (1)	❍	❍	❍	❍	❍
Can't stand conflict. (2)	❍	❍	❍	❍	❍
Hate to seem pushy. (3)	❍	❍	❍	❍	❍
Have a sharp tongue. (4)	❍	❍	❍	❍	❍
Contradict others. (5)	❍	❍	❍	❍	❍
Love a good fight. (6)	❍	❍	❍	❍	❍
Yell at people. (7)	❍	❍	❍	❍	❍
Insult people. (8)	❍	❍	❍	❍	❍
Get back at others. (9)	❍	❍	❍	❍	❍
Hold a grudge. (10)	❍	❍	❍	❍	❍

Altruism

Please read each statement carefully, and then use the rating scale below to describe how accurately each statement describes you.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)
Make people feel welcome. (1)	❍	❍	❍	❍	❍
Anticipate the needs of others. (2)	❍	❍	❍	❍	❍
Love to help others. (3)	❍	❍	❍	❍	❍
Am concerned with others. (4)	❍	❍	❍	❍	❍
Have a good word for everyone. (5)	❍	❍	❍	❍	❍
Look down on others. (6)	❍	❍	❍	❍	❍
Am indifferent to the feelings of others. (7)	❍	❍	❍	❍	❍
Make people feel uncomfortable. (8)	❍	❍	❍	❍	❍
Turn my back on others. (9)	❍	❍	❍	❍	❍
Take no time for others. (10)	❍	❍	❍	❍	❍

Dutifulness

Please read each statement carefully, and then use the rating scale below to describe how accurately each statement describes you.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)
Try to follow the rules. (1)	❍	❍	❍	❍	❍
Keep my promises. (2)	❍	❍	❍	❍	❍
Pay my bills on time. (3)	❍	❍	❍	❍	❍
Tell the truth. (4)	❍	❍	❍	❍	❍
Listen to my conscience. (5)	❍	❍	❍	❍	❍
Break rules. (6)	❍	❍	❍	❍	❍
Break my promises. (7)	❍	❍	❍	❍	❍
Get others to do my duties. (8)	❍	❍	❍	❍	❍
Do the opposite of what is asked. (9)	❍	❍	❍	❍	❍
Misrepresent the facts. (10)	❍	❍	❍	❍	❍

Achievement Striving

Please read each statement carefully, and then use the rating scale below to describe how accurately each statement describes you.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)
Go straight for the goal. (1)	❍	❍	❍	❍	❍
Work hard. (2)	❍	❍	❍	❍	❍
Turn plans into actions. (3)	❍	❍	❍	❍	❍
Plunge into tasks with all my heart. (4)	❍	❍	❍	❍	❍
Do more than what's expected of me. (5)	❍	❍	❍	❍	❍
Set high standards for myself and others. (6)	❍	❍	❍	❍	❍
Demand quality. (7)	❍	❍	❍	❍	❍
Am not highly motivated to succeed. (8)	❍	❍	❍	❍	❍
Do just enough work to get by. (9)	❍	❍	❍	❍	❍
Put little time and effort into my work. (10)	❍	❍	❍	❍	❍

Cautiousness

Please read each statement carefully, and then use the rating scale below to describe how accurately each statement describes you.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)
Avoid mistakes. (1)	❍	❍	❍	❍	❍
Choose my words with care. (2)	❍	❍	❍	❍	❍
Stick to my chosen path. (3)	❍	❍	❍	❍	❍
Jump into things without thinking. (4)	❍	❍	❍	❍	❍
Make rash decisions. (5)	❍	❍	❍	❍	❍
Like to act on a whim. (6)	❍	❍	❍	❍	❍
Rush into things. (7)	❍	❍	❍	❍	❍
Do crazy things. (8)	❍	❍	❍	❍	❍
Act without thinking. (9)	❍	❍	❍	❍	❍
Often make last-minute plans. (10)	❍	❍	❍	❍	❍

Depression

Please read each statement carefully, and then use the rating scale below to describe how accurately each statement describes you.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)
Often feel blue. (1)	❍	❍	❍	❍	❍
Dislike myself. (2)	❍	❍	❍	❍	❍
Am often down in the dumps. (3)	❍	❍	❍	❍	❍
Have a low opinion of myself. (4)	❍	❍	❍	❍	❍
Have frequent mood swings. (5)	❍	❍	❍	❍	❍
Feel desperate. (6)	❍	❍	❍	❍	❍
Feel that my life lacks direction. (7)	❍	❍	❍	❍	❍
Seldom feel blue. (8)	❍	❍	❍	❍	❍
Feel comfortable with myself. (9)	❍	❍	❍	❍	❍
Am very pleased with myself. (10)	❍	❍	❍	❍	❍

Self-Consciousness

Please read each statement carefully, and then use the rating scale below to describe how accurately each statement describes you.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)
Am easily intimidated. (1)	❍	❍	❍	❍	❍
Am afraid that I will do the wrong thing. (2)	❍	❍	❍	❍	❍
Find it difficult to approach others. (3)	❍	❍	❍	❍	❍
Am afraid to draw attention to myself. (4)	❍	❍	❍	❍	❍
Stumble over my words. (5)	❍	❍	❍	❍	❍
Only feel comfortable with friends. (6)	❍	❍	❍	❍	❍
Am not embarrassed easily. (7)	❍	❍	❍	❍	❍
Am comfortable in unfamiliar situations. (8)	❍	❍	❍	❍	❍
Am not bothered by difficult social situations. (9)	❍	❍	❍	❍	❍
Am able to stand up for myself (10)	❍	❍	❍	❍	❍

Vulnerability

Please read each statement carefully, and then use the rating scale below to describe how accurately each statement describes you.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)
Panic easily. (1)	❍	❍	❍	❍	❍
Become overwhelmed by events. (2)	❍	❍	❍	❍	❍
Feel that I'm unable to deal with things. (3)	❍	❍	❍	❍	❍
Can't make up my mind. (4)	❍	❍	❍	❍	❍
Get overwhelmed by emotions. (5)	❍	❍	❍	❍	❍
Remain calm under pressure. (6)	❍	❍	❍	❍	❍
Can handle complex problems. (7)	❍	❍	❍	❍	❍
Know how to cope. (8)	❍	❍	❍	❍	❍
Readily overcome setbacks. (9)	❍	❍	❍	❍	❍
Am calm even in tense situations. (10)	❍	❍	❍	❍	❍

Anxiety

Please read each statement carefully, and then use the rating scale below to describe how accurately each statement describes you.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)
Worry about things. (1)	❍	❍	❍	❍	❍
Fear for the worst. (2)	❍	❍	❍	❍	❍
Am afraid of many things. (3)	❍	❍	❍	❍	❍
Get stressed out easily. (4)	❍	❍	❍	❍	❍
Get caught up in my problems. (5)	❍	❍	❍	❍	❍
Am not easily bothered by things. (6)	❍	❍	❍	❍	❍
Am relaxed most of the time. (7)	❍	❍	❍	❍	❍
Am not easily disturbed by events. (8)	❍	❍	❍	❍	❍
Don't worry about things that have already happened. (9)	❍	❍	❍	❍	❍
Adapt easily to new situations. (10)	❍	❍	❍	❍	❍
Please select rating 4 if you have read this statement. (11)	❍	❍	❍	❍	❍

APPENDIX F: BOGUS ITEMS AND ATTENTION CHECKS

Bogus Items:

1. I am using a computer, tablet, or another electronic device to complete this survey – requiring a reply of strongly agree

2. Please select rating 3 if you have read this statement.

3. Please select rating 4 if you have read this statement.

Attention Checks (Response preventing survey completion):

Q24 What is your age? (*If selecting less than 25*)

Q30 How many years have you worked for your current organization? (*If selection less than .5)*

Q32 How many hours per week do you work in your current role? *(If selection less than 30)*

Q33 Please select the option below that best describes your industry. *(Government)*

- ❍ Construction (1)
- ❍ Education (2)
- ❍ Health Care & Social Assistance (3)
- ❍ Finance & Industry (4)
- ❍ Information Technology (5)
- ❍ Leisure & Hospitality (6)
- ❍ Manufacturing (7)
- ❍ Natural Resources & Mining (8)
- ❍ Other Services (9)
- ❍ Professional & Business Services (10)
- ❍ Trade, Transportation, & Utilities (11)
- ❍ Government (12)

Other (13)

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